

B1B Evolution and Environment

Checklist of outcomes you must be able to demonstrate for each topic:

Adaptation for survival

	Not sure	I know this	I have revised this
Define the term 'adaptation'.			
Describe how animals are adapted to survive in cold climates.			
Describe how animals are adapted to life in a dry climate.			
Suggest how organisms are adapted to the conditions in which they live, when provided with appropriate information.			
Describe the adaptations shown by plants that live in dry environments.			
Explain the importance of water-storage tissues in desert plants.			
Explain how competition is necessary for survival.			
Describe those characteristics which make an animal a successful competitor.			
Suggest the factors for which an animal is competing in a given habitat.			
Explain why certain characteristics make an animal a successful competitor.			
Explain why plants need light.			
Explain why plants need minerals.			
Suggest the factors for which plants are competing in a given habitat.			
Suggest why some plants are better competitors in a given habitat.			
Evaluate the strategies used by plants to make them successful competitors, e.g. seed dispersal mechanisms.			

Inheritance

	Not sure	I know this	I have revised this
Explain that genetic information is present in the gametes from each parent.			
Describe the relationship between chromosomes and genes.			
State clearly where the chromosomes are located in the cells.			
Explain that each gene affects a different characteristic.			
Understand that genetic information is carried on the DNA molecule.			
Recognise that genes are found in pairs on paired chromosomes.			
Describe why asexual reproduction produces identical offspring.			
Describe how variety is achieved in individuals produced by sexual reproduction.			
Explain the genetic differences between sexually and asexually produced offspring.			
Define a clone.			
Explain the importance to gardeners and plant growers of cloning plants.			
Describe cloning by tissue culture in plants.			
Describe the process of embryo transplanting in animals.			
Interpret information about the advantages and disadvantages of different cloning techniques.			
Make informed judgements on the economic and ethical issues concerning embryo cloning			
Explain the processes of fusion cell and adult cell cloning.			
Describe how Dolly the sheep was cloned.			
List some of the benefits and disadvantages of cloning animals.			
Evaluate the advantages and disadvantages of cloning.			
Discuss the ethical issues raised by adult cell cloning techniques.			
Explain the term 'genetic engineering'.			
Describe how genes from one organism can be transferred into another organism.			
List the advantages and disadvantages of genetic engineering.			

Interpret information about cloning techniques and genetic engineering techniques.			
Explain the process of genetic engineering, and the difference between genetically modified organisms which produce useful proteins and organisms which are improved themselves.			
Evaluate the advantages and disadvantages of genetic engineering.			

Evolution

	Not sure	I know this	I have revised this
Explain what a fossil is.			
Suggest reasons why scientists cannot be certain about how life began on Earth.			
Evaluate what can be learnt from the fossil record.			
State the theory of evolution.			
Describe some of the evidence that evolution has taken place.			
Suggest reasons why Darwin's theory of natural selection was only gradually accepted.			
Identify the differences between Darwin's theory of evolution and conflicting theories, e.g. Lamarck's.			
Suggest reasons for the different theories explaining life on Earth.			
Explain what is meant by natural selection.			
State that mutation results in changes to genes.			
Explain how mutation can affect the evolution of an organism.			
Explain what is meant by extinction.			
Explain how environmental changes cause extinction.			
Describe how new predators, new diseases and new competition from other organisms can cause the extinction of species.			
Evaluate the impact of introducing new organisms into an environment.			

How people affect the planet

	Not sure	I know this	I have revised this
Explain why raw materials are rapidly being used up and more waste is being produced.			
Describe how water, air and land may become polluted with waste.			
Analyse and interpret scientific data concerning human population growth and environmental issues.			
Describe how acid rain is formed and some of the effects of acid rain on living organisms.			
Analyse and interpret scientific data concerning the effects of acid rain.			
Explain how combustion and deforestation may cause an increase in carbon dioxide levels in the atmosphere.			
Describe how the activities of living organisms affect the composition of the atmosphere.			
Suggest some of the consequences of global warming.			
Explain the 'greenhouse effect'.			
Evaluate the impact of the greenhouse effect on conditions on the Earth.			
Explain the meaning of sustainable development.			
Describe ways in which families can help to conserve resources.			
Weigh evidence and form balanced judgements about some of the major environmental issues facing society, including the importance of sustainable development.			
Describe how living organisms can indicate levels of pollution.			
Explain the difference between building on green field and brown field sites.			
Evaluate methods of collecting environmental data and consider their reliability and value as evidence.			